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| Notice of Allowability | Application No. | Applicant(s) | |
| | 10/629,471 | EDELMAN ET AL. | |
| | Examiner Charles D. Garber | Art Unit 2856 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to 07/29/2003.
2. The allowed claim(s) is/are 1,3-12,14-17 and 22-29.
3. The drawings filed on _____ are accepted by the Examiner.
4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some*
 - c) None
 of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of
 Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. Notice of References Cited (PTO-892)
2. Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 07/29/2003
4. Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. Notice of Informal Patent Application (PTO-152)
6. Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. Examiner's Amendment/Comment
8. Examiner's Statement of Reasons for Allowance
9. Other _____.

DETAILED ACTION

While the Examiner had earlier indicated several changes to the claims in the parent case constituted new matter in the strictest sense Examiner now considers the changes to be of a rather minor nature and within the scope of the original specification. Specifically, the measurement system being "external" was challenged by the Examiner. Though the term "external" was not recited within the disclosure to describe the measurement system the figures show the measurement system to be external to the flow within the tubes. Also Examiner had challenged "biological signal" and "biologic effect" which were terms added to the claims but which were not expressly supported in the original disclosure. However, as the invention is generally related to mimicking blood flow in the process of measuring blood clotting and other effects the new terms are not considered to be outside the scope of the original disclosure. Finally, Examiner had challenged Applicant's including the "loop has the geometric characteristics of a coronary arterial segment" because only the inner diameter of the loop shared such characteristics and not other aspects of the geometry such as outside diameter. As only the inside diameter is considered relevant to the purposes of the invention Examiners considers the one shared characteristic to be sufficient to allow inclusion of the new phraseology.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Add the following section before the BACKGROUND OF THE INVENTION:

RELATED APPLICATIONS

This application is a Continuation of Application number 09/804,936 filed 03/13/2001, and now Abandoned, which also claims benefit of Provisional Application number 60/188,723 filed 03/13/2000.

Allowable Subject Matter

Claims 1, 3-12, 14-17 and 22-29 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1 and 12, the closest prior art of Clark (US Patent 3,766,774 cited by Examiner in the Parent Application) discloses an apparatus and method for measuring blood flow characteristics (title).

Clark includes simulating in vivo blood flow conditions (abstract) comprising a blood filled tube 22 (figures 1 and 2 and column 4 lines 18-23); a shaft 25 (figures 1 and 2) or rotor stage for maintaining at least one wheel 21 or rotor, the tube or loop is shown (figures 1 and 2) positioned on the wheel or rotor. Clark also discloses an oscillatory motor 60 with electronic controlled magnetic pulse escapement which is substantively equivalent to the driving motor with motion controller controlling the speed and

directional motion of the motor as in the instant invention (column 2 lines 1-45 and column 5 lines 51+). As the fluid within the tube moves in response to the tube motion the controller is also considered a system for controlling the contained loop flow within the loop as in the instant invention. The same system includes "means to detect, measure and record...amplitudes and periods and means to record the time of a particular event happening in the blood" which is considered substantively equivalent to the measurement system to observe, record the loop flow within the loop as in the instant invention.

However, Clark does not teach the device may control specific modifiable flow patterns. Clark only teaches a "desired oscillatory motion could be induced by a clock movement". On the other hand, the instant invention recites a specific modifiable flow pattern which is defined in the specification to mean various flows composed of building block functions. Examples are shown in figure 12.

No other prior art in a relevant art area suggests modifying Clark towards creating and controlling specific flow patterns.

The remaining claims depending from either claim 1 or 12 are allowable for the same reason.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Solen et al. (US Patent 6,043,871) discloses a similar device for measuring properties of a fluid (blood) in a loop. Solen also lacks controlling the flow pattern.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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